Expert Report

Prepared By

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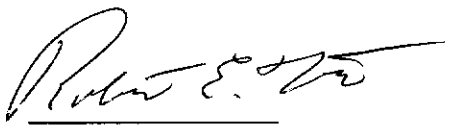
Tundra Swan Injury Assessment:

Lower Coeur d'Alene River Basin, Idaho



Robert E. Trost

I have been asked to review, evaluate, and respond to the *Debtors' Disclosure Concerning Coeur d'Alene (Box and Basin), Idaho Site,* the *Expert Report of Jeffrey Zelikson and Richard Lane White* (15 June, 2007) and the Expert Report of Robert Powell, Ph.D., P.E., William Desvousges, Ph.D., and Environ International Corporation on behalf of ASARCO Incorporated (15 June, 2007) as they relate to the Trundra Swan (*Cygnus columbianus*) component of this action.

I have identified three main issues raised by the defendants. The first two issues are not new and I have addressed these previously (Trost 2004: pages 6-7 and Deposition of Robert E. Trost, November 9, 2004: Pages 69-75), I believe the third issue is new and relates to the cost estimates for remedial actions that I (we) have presented in the previous expert report (Trost 2004). My response to the three major points follows:

Issue 1: The overall population of Tundra Swans has increased and thus there is no damage.

As I have previously stated (Trost 2004: pages 6-7 and Deposition of Robert E. Trost, November 9, 2004: Pages 69-75), I believe this argument to be spurious because all take of migratory birds is prohibited unless permitted under the provisions of the Migratory Bird Treaty Act and poisoning of any migratory birds is a clear violation of this statute and the Code of Federal Regulations (50 CFR 20.21(a)). Additionally, the Service has a clear and consistent record of prosecution of known violators regardless of population status of the species illegally taken or magnitude of the illegal take (i.e. a duck hunter harvesting one duck more than the allowed daily bag limit would be cited).

Issue 2. The lead may not all come from the Coeur d'Alene area.

This issue has been addressed as follows:

(1) Swan mortality was adjusted for those swans that died from non-artefactual lead poisoning based on 199 dead Tundra Swans collected on the area and necropsied to determine the cause of mortality (Audet et al. 1999). Therefore, lead poisoned birds from sources of lead other than mining operations in the area have been adjusted for in the calculation of mortality.

(2) It is unlikely that many birds could travel any great distance when poisoned by lead. Toxic effects of lead are generally observed within one-week of ingestion (Friend 1987:189). Once the toxic effects becoming established, such birds are very unlikely to move any appreciable distance, although the bird may survive for 2-3 weeks in the weakened condition (Friend 1987:189). Bellrose (1959) administered various numbers of lead shot to ducks and then recorded the distance moved by those whose bands were recovered immediately following

dosing. He states: "Conversely, it can be assumed that only a small percentage of the ducks that have become ill from lead poisoning have migrated farther than 50 miles from where they ingested shot.". I know of no other source of non-artefactual lead in the Spring migration path of these swans prior to reaching the Coeur d'Alene Basin and the defendants offer no proof that such a source exists.

(3) No inflation of our mortality estimate was used for birds that were poisoned in the Coeur d'Alene Basin but traveled outside the area to die. Since the area is known to be a source of high lead ingestion rates such movement out of the area is more likely than movement into the area and thus the mortality estimates are conservative with regard to any movement bias that may be present.

Issue 3. The estimated costs for restitution should be based solely on the easement costs for the Y-K Delta, not the feeding habitat restoration or agricultural conversion options that were also used.

The highest priority in addressing the documented losses is to first and foremost reduce or eliminate the cause of mortality. To meet this priority, the only remedial action we have proposed is restoration of the affected swan feeding habitats in the Coeur d'Alene basin. Admittedly, this action is by far the most expensive of the three restoration actions we have proposed, but it is the most necessary as well. Without addressing the areas that are causing mortality, swans (and other wildlife) will continue to ingest toxic lead causing injury and death. The other proposed actions are considered secondary to this primary action and will help address the cumulative losses (both past and future) that have or will occur due to the contamination of this area. I do not believe that the proposed easement can serve as a substitute for the restoration of the affected swan feeding areas.

The proposal that the easement costs should be used to address all of the damage is also not valid because it is not feasible to implement. The easement we have proposed constitutes the entire primary nesting area of this population of Tundra swans in private ownership. I know of no additional areas where an easement could reasonably be expected to be obtained that would benefit nesting Tundra Swans from this population. I would also note for consideration that even the easement we have proposed is problematic as the native Corporation that owns this property has presently indicated that they would not grant a conservation easement for the amount the Federal government is authorized to spend. The Service is exploring alternatives with the native corporation in this area that might achieve the objectives of the easement for a similar cost.

In closing, I would note that Zelikson and White (2007:83-89) allude to a number of minor discrepancies regarding calculations in my original Expert Report (Trost 2004). I believe some of these are not errors, but a direct result of some of the

necessary assumptions that were made regarding the interaction of impacts of various restoration actions. For example, I note their observation that estimated gains (in swan years) are not additive in my estimates of their combined impacts (Zelikson and White 2007: 84 footnote 303). This is because of the assumption of a uniform random distribution of swans across all available habitats (Trost 2004: Appendix A: pg. 7 of 24). This assumption results in different swan densities and thus expected impacts depending on what restoration activities are being combined. I do acknowledge the error on page 5 of my 2004 Expert Report (Trost 2004) that employed the figure 35,000 rather than the correct figure of 41,000 to determine the cost of the remaining unaddressed losses.

Literature cited:

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Friend, Milton, editor. 1987. Field guide to wildlife diseases. U.S. Fish and Wildlife Serv., Resour. Publ. 167. 225pp.

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Zelikson, J. and R.L. White. 2007. Expert Report of June 15, 2007.